MECHANICAL CONTROLS

The primary flight control system is a conventional direct cable system designed to fulfill the requirements of safety, function and reliability. Flexible steel aircraft cable, routed with a minimum of cable bends, provides a system with maximum non-jamming, low-friction characteristics. The cockpit controls are provided with anti-fouling guards at the pilots' floor. Locations of turnbuckles are staggered and/or have dissimilar ends to prevent the possibility of crossed controls. The primary control systems are duplicated from the cockpit to the control surface. Independent trim tab or spring tab controls are installed for the aileron, rudder and elevator systems. The control surface lock system is designed to fail safe and incorporates a throttle interlock to preclude the application of take-off power with the control systems locked. All control elements at the surfaces are sealed against the entrance of water to preclude freezing.

Control cables are routed below the floor of the upper compartment from the pilots' stations aft to the point of dispersion. The size of the airplane directly affects system rigidity and effectiveness under adverse temperature conditions. These problems are overcome by the use of duplicate systems, long cable travels, and smaller diameter cable rigged to a somewhat higher load than normal. The simplicity of this mechanical control system decreases maintenance problems and provides a high degree of reliability.

The primary flight control systems are shown schematically on page 50.

The following are the mechanically controlled systems at the pilots' and systems engineer's stations.

Pilots' Station

RUDDER PEDALS - Controls the yawing motion of the airplane by operating a linkage in the tail of the airplane. This linkage actuates the rudder and the rudder control tab for aerodynamic boost.

RUDDER PEDAL ADJUSTMENT - Adjusts the position of the rudder pedals fore and aft for the comfort of the pilot.

AILERON WHEEL - Rotating motion controls the rolling motion of the airplane by operating linkages in each wing. These linkages actuate the ailerons and the aileron control tabs for aerodynamic boost.

CONTROL COLUMN - Fore and aft motion of the column controls the pitching motion of the airplane by operating a linkage in the tail of the airplane. This linkage actuates the elevators and the elevator control tabs for aerodynamic boost.